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BROWN AND CALDWELL

May 20, 2003

Alameda County
MAY 22 2003
Environmental Health

Mr. Scott O. Seery
Alameda County Health Care Services Agency
Department of Environmental Health Services Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

017-24288-01/1

Subject: Draft Preliminary Site Assessment Work Plan, Vulcan Materials, 501 El Charro Road, Pleasanton, California

Dear Mr. Seery:

On behalf of Vulcan Materials, Brown and Caldwell (BC) is submitting this draft work plan for a Preliminary Site Assessment (PSA) Work Plan at the subject site (Figure 1) related to former gasoline and diesel underground storage tanks (USTs). This work is being conducted at the request of the Alameda County Department of Environmental Health Services (County) as outlined in their March 25, 2003 letter.

The objective of the investigation is to assess the extent of the release at the site and characterize the stratigraphic and hydrogeological system. To accomplish this objective, the following tasks will be completed:

- Advance four hollow stem auger borings to first encountered groundwater, a maximum of 50 feet below ground surface (bgs), or refusal;
- Collect grab soil samples and groundwater samples using a HydroPunch® tool at each location;
- Submit soil and groundwater samples for chemical analysis; and
- Prepare report.

Based on conversations with a local well driller a hollow stem auger drill rig is capable of reaching the required depth through gravels and cobbles present in the Pleasanton area. However based on field conditions a mud rotary drill rig may be required to reach the desired depth.

This workplan includes a site background summary, scope of work for hollow stem auger drilling, and schedule.

Site Background

Two former USTs were located at the site (Figure 1). One UST was a 12,000 gallon diesel tank and the other was a 6,000 gallon gasoline tank. As part of the dispensing system four diesel and one gasoline dispenser were located in the vicinity of the tanks as shown on Figure 2.

On November 5, 2002, the USTs were removed by DCM Construction (DCM) of Dublin, California. ACC Environmental Consultants (ACC) was contracted by DCM to perform required soil sampling related to the removal of the two USTs. ACC collected two soil samples under each UST. The Alameda County Health Care Services Agency (ACHCSA) required representative soil samples collected under each fuel dispenser. The samples collected under the USTs ranged in depth from 14 feet below ground surface (bgs) under Tank 1 to 13 feet bgs under Tank 2. Soil samples under the dispensers were collected approximately one foot below each dispenser foundation.

During the UST removals, no observable field indications of a petroleum hydrocarbon release were noted. Confirmation soil samples collected in native soil under the USTs reported detectable concentrations of petroleum hydrocarbons as shown in Table 1. The soil sample T1F-12.4' located at 12.4 feet below Tank 1, contained the highest concentrations of petroleum hydrocarbons. The detections in sample T1F-12.4' included 31 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPHg), 1,800 ppm TPH as diesel (TPHd), and 2.1 ppm total xylenes.

The native soil of the site is described as ranging from gravel and cobbles to clay in a well completion report for a new water supply well on site. Static groundwater is approximately 114 feet bgs as reported in the well completion report, however the well's sanitary seal extends from the surface to 180 feet bgs.

Scope of Work

This section describes the proposed scope of work for hollow stem auger drilling and soil and groundwater sampling. Field procedures for these tasks are described in further detail in Exhibit A.

Four boreholes will be advanced using hollow stem auger methods to assess the stratigraphy and the extent of the petroleum hydrocarbon release on site. Groundwater samples will be collected by advancing a HydroPunch® tool to the appropriate depth. Soil samples will be collected using a continuous core sampler during advancement to groundwater. If the lithology is adverse to the use of a continuous core sampler then soil samples will be collected every five feet using a split-spoon sampler. Table 2 shows locations and purpose for each boring. The locations are located are north, east, west, south, and in the former underground storage tank excavation (Figure 2). The boreholes will be used to define the lateral extent of petroleum hydrocarbon impacted soil and groundwater if any.

Because the lateral and vertical extent of petroleum hydrocarbon impacted soil and groundwater if any is unknown, caution will be exercised in drilling through potentially contaminated zones. If groundwater is encountered above a potential confining layer a water sample will be collected and drilling will cease one foot into the low permeability layer. If no water is encountered above a low permeability layer drilling will cease at 50 feet bgs or refusal.

A Site Safety and Health Plan (SSHP), will be prepared for this site and will be followed and retained on-site during the field work performed. All necessary permits will be acquired from the County and Zone 7 Water Agency prior to start of work.

Hollow Stem Auger Boreholes. Hollow stem auger boreholes will be continuously logged with samples collected every five feet to groundwater for lithology identification and analytical purposes. Soil core samples will be monitored for organic vapors using a photoionization detector (PID). If PID readings indicate elevated concentrations of petroleum hydrocarbons, then soil samples will be retained for laboratory analysis.

Soil samples will be analyzed for the presence of TPHg and TPHd, BTEX, and 1, 2-DCA, EDB, MTBE, and the LUFT oxygenates using Environmental Protection Agency (EPA) Method 8260B and 8015 Modified, and for total lead by EPA Method 6010B.

HydroPunch® Groundwater Sampling. One HydroPunch® groundwater sample will be collected from each borehole. Water samples will be collected at first encountered groundwater. Groundwater samples will be analyzed for the presence of TPHg and TPHd, BTEX, and 1,2-DCA, EDB, MTBE, and the LUFT oxygenates using Environmental Protection Agency (EPA) Method 8260Band 8015 Modified, and for total lead by EPA Method 6010B.

Groundwater samples will be submitted to a State of California Department of Toxic Substances Control certified laboratory for the analysis of hazardous materials.

Project Schedule

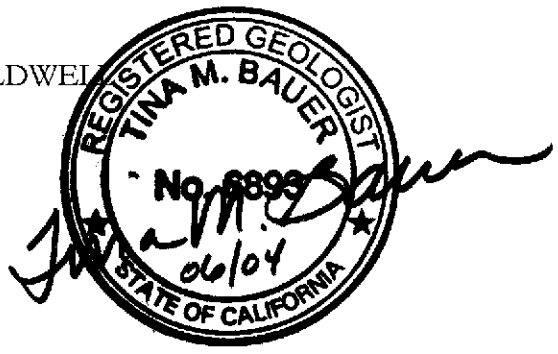
The field work will require approximately four days to complete. This time frame includes advancing 4 boreholes to total depth and collection of soil and groundwater samples. Field work will be scheduled upon receiving written approval of the work plan from Alameda County.

A Site Conceptual Model (SCM) and PSA report will be completed within 60 days after completion of the field work. The SCM is a set of working hypotheses pertaining to all aspects of the contaminant release, including geology, hydrogeology, release history, residual and dissolved contamination, attenuation mechanisms, pathways to nearby receptors, and likely impacts to receptors. The SCM will be used to identify data gaps that are subsequently filled as the investigation proceeds. The PSA report will also include a description of field methods, results of laboratory analysis of any soil and groundwater samples, geology and hydrogeology interpretation, conclusions and recommendations.

If you have questions or comments, please call me at (916) 444-0123.

Sincerely,

BROWN AND CALDWELL



Tina M. Bauer, R.G.
Project Manager

TMB:ds

Enclosures

cc: Mr. Kenny Benson, Vulcan Materials
Mr. Tom Boden, Vulcan Materials
Mr. Chuck Frey, Brown and Caldwell

Table 1. Analytical Data from November, 2002 UST Removal

Sample ID	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylene	TBA	MTBE	DIPE	ETBE	TAME	Total Lead
TANK 1												
T1V-14.0'	68	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	0.011	<0.005	<0.010	<0.0050	<0.0050	6.3
T1F-12.4'	1,800	31	<0.025	<0.025	0.66	2.1	<0.025	<0.025	<0.050	<0.025	<0.025	4.6
TANK 2												
T2V-11.5'	N/A	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	2.0
T2F-12.5'	N/A	2.7	<0.0050	<0.0050	<0.0050	0.010	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	6.3
DISPENSERS												
D1-2.0	50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	N/A
D2-2.0	2.8	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	N/A
D3-2.0	95	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	N/A
D4-2.0	29	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	N/A
D5-2.0	<1.0	<1.0	<0.0050	0.011	0.042	0.31	0.0083	<0.0050	<0.010	<0.0050	<0.0050	N/A
SOIL STOCKPILE												
SP-(A-D)	53	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	0.02	<0.0050	<0.010	<0.0050	<0.0050	2.7

Notes:
Sample results are in milligrams per kilogram (mg/kg)
< = analytical results under laboratory reporting limits
N/A = samples were not analyzed for this constituent
TBA = tert-butyl alcohol
MTBE = methyl tert-butyl ether
DIPE = di-isopropyl ether
ETBE = ethyl tert-butyl ether
TAME = tert-amyl methyl ether

Table 2. Location and Purpose of Borings

Well ID	Location	Purpose	Total depth (feet bgs)
B-1	UST excavation	Determine lithology and extent of TPH in soil and groundwater.	50
B-2	North of former UST	Determine lithology and extent of TPH in soil and groundwater.	50
B-3	West of former UST	Determine lithology and extent of TPH in soil and groundwater.	50
B-4	South of former UST	Determine lithology and extent of TPH in soil and groundwater.	50
B-5	East of former UST	Determine lithology and extent of TPH in soil and groundwater.	50

PH = Petroleum Hydrocarbons

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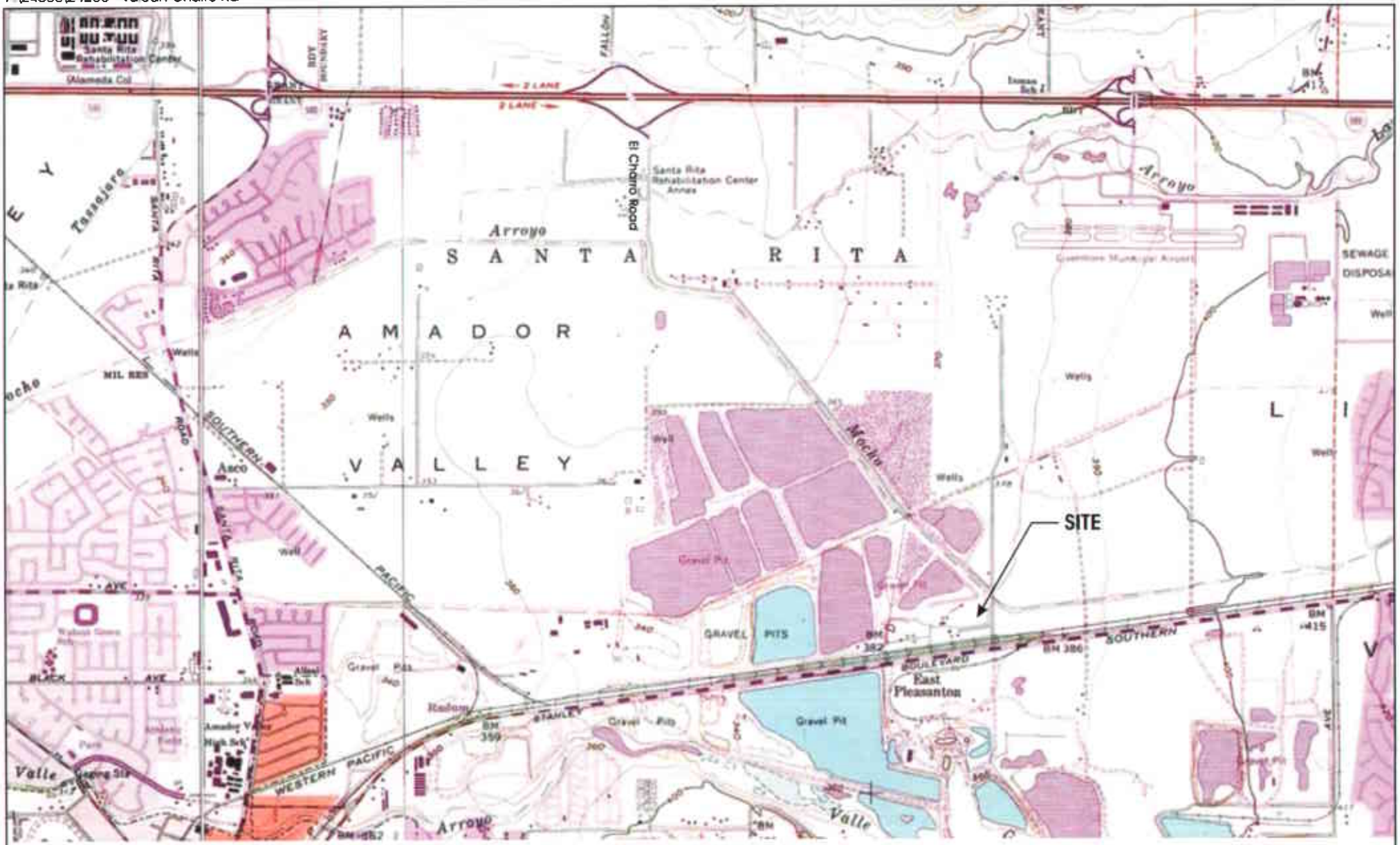

Source: TOPO! 2001 National Geographic

BROWN AND CALDWELL	PROJECT 24288-001	SITE Vulcan Materials, Pleasanton, California	Figure 1
	DATE 5-14-03	TITLE Site Location Map	

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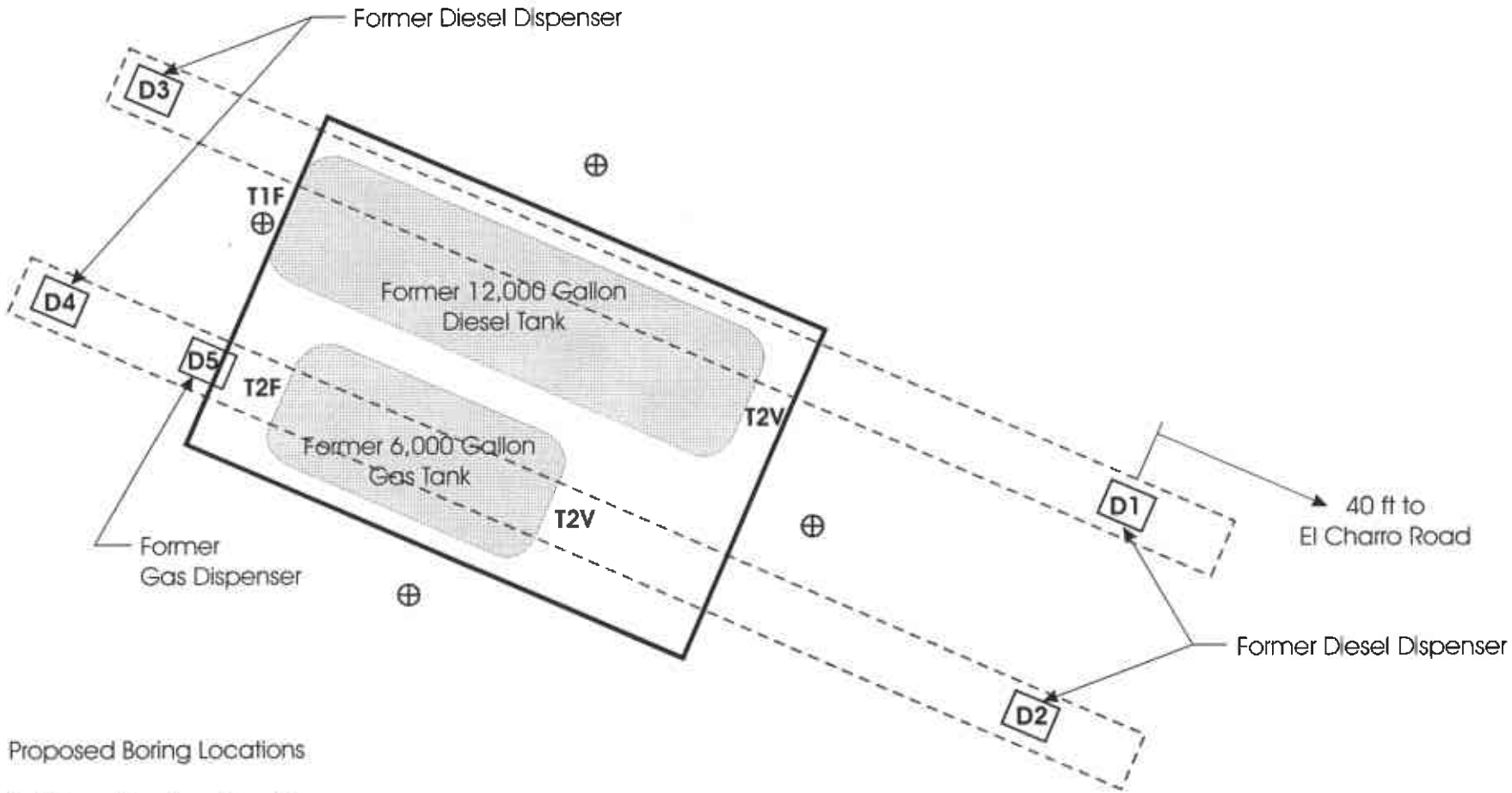

⊕ Proposed Boring Locations

D1 Soil Sampling Locations Beneath the USTs

T2V Soil Sampling Locations at Dispensers

Area of Former Excavation

0 5 10

Scale in Feet

NORTH

Source: ACC Environmental Consultants, December 2002

BROWN AND CALDWELL	PROJECT 24288-001	SITE Vulcan Materials, Pleasanton, California	Figure 2
	DATE 5-14-03	TITLE Proposed Boring Locations	

FIELD PROCEDURES

Exhibit A describes field procedures for hollow stem auger drilling, soil sampling, groundwater sampling, and sample handling.

Underground Service Alert (USA) will be notified a minimum of 48 hours prior to starting field work activities, to identify the location of local underground utilities in the vicinity of the work area. A representative of Vulcan Materials will be contacted prior to drilling to locate any utilities that may be in the work area, not identified by USA. In addition, all soil borings will be hand augered to a depth of approximately 5 feet to check for underground utilities, prior to drilling.

Hollow Stem Auger Drilling

Hollow stem auger boreholes will be advanced by a licensed drilling subcontractor. Hollow stem auger uses continuous flight hollow stem auger with a bit on the bottom to drill and maintain an open borehole. The continuous flight auger drives the drill cuttings to the surface as drilling progresses. To prevent cross contamination during borehole advancement, all equipment is steam cleaned prior to and between use at each borehole. All waste fluids produced during steam cleaning and soil cuttings produced during drilling operations will be placed into Department of Transportation (DOT) approved 55-gallon drums. Drums will be disposed of properly. Upon completion of each hole, a bentonite slurry will be pumped down the hole through a tremmie pipe from the bottom to the top. The surface of each hole will be finished with a non-shrinking, high-strength concrete, or with existing surface material, as appropriate.

SOIL SAMPLING

Soil samples will be collected during borehole advancement for three reasons: (1) for field identification of the borehole lithology, (2) for qualitative field screening for the presence of contaminants, and (3) for chemical analysis.

For purposes of collecting soil samples for lithologic identification and for field screening, soil will be collected using continuous coring methods. If the lithology is adverse to the use of a continuous core sampler then soil samples will be collected every five feet using a split-spoon sampler. The soil samples will be examined in the field and classified according the Unified Soil Classification system. In addition to evaluating the borehole lithology, the soil samples will be screened in the field for volatile organic compounds with a photoionization detector (PID) or similar instrument, the soil will be observed for staining or odors, and the relative permeability of the soil will be qualitatively estimated. The lithology, PID reading, and estimated permeability of each sample will be recorded on the borehole log next to the depth interval from which the sample was obtained.

Soil samples for laboratory chemical analysis will typically be collected at 5-foot intervals, at a minimum, to the groundwater table. The samples will be obtained using a 2-inch-diameter by 24-inch-

long continuous core sampler lined with 6-inch-long thin-walled brass tubes. The sampler will be driven its entire length into undisturbed soil.

When the sampler is extracted from the borehole, the brass tubes will be removed and the ends of the tubes will immediately be screened for the presence of hydrocarbons with a PID or equivalent instrument. One sample per 5-foot sampling interval will be selected for possible chemical analysis on the basis of the highest PID reading. The ends of the selected brass tube will be (1) covered with aluminum foil or Teflon sheets and plastic caps, which will then be taped with plastic tape to provide an air-tight seal; (2) labeled and placed into zip-lock plastic bags, and (3) stored in a cooled ice chest for delivery to the analytical laboratory. These procedures minimize the potential for cross contamination and volatilization of volatile organic compounds prior to chemical analysis.

To prevent cross contamination during sampling, all equipment will be washed with laboratory-grade detergent, rinsed with tap water, and rinsed with deionized water before and between collecting each sample.

Soil samples not submitted to a laboratory for analysis will be separated into clean and dirty piles based on PID and visual observations. Clean soil will be placed as directed by the client. Impacted soil will be characterized and disposed of properly

GROUNDWATER SAMPLING

Water samples will be collected using a HydroPunch® and will be collected from within the tool casing. The groundwater sample will be obtained with a Teflon or a disposable polyethylene bailer equipped with a bottom-emptying valve. To release water from the bailer with minimal aeration, the protrusion on the bottom-emptying device actuates the bottom check valve and regulates the flow into the sample bottle.

The sample containers will be obtained precleaned from the analytical laboratory, and it will be specific with respect to size and material to the type of analysis to be performed. The container will be carefully filled to the very top, in order to create a positive meniscus, and sealed with a Teflon-lined cap (septa). These precautions aid in eliminating air from the sample. The sample will be visually inspected to ensure that no air bubbles remain within.

Depending on the type of analysis required, samples will be preserved with a chemical preservative and/or cooled to 4 degrees Celsius. Samples then will be labeled, stored, and transported in cooled ice chests to the analytical laboratory within the permissible holding time.

SAMPLE HANDLING

Samples are handled during collection and shipment in such a way as to ensure maximum sample quality and integrity. All samples will be collected by experienced field personnel. The samples will be collected in containers that are appropriate to the sample material and the required analyses. All

sample containers are precleaned by the analytical laboratory or the container manufacturer or are decontaminated in the field by washing with laboratory-grade detergent, rinsing with tap water, and then rinsing with deionized water. All sampling equipment will be decontaminated prior to and between use.

Each sample container will have a label affixed in the field that identifies the date and time of sample collection, name of sampler, job number, and a unique sample number. This information will be recorded on the boring log or in the field records. Samples are stored and shipped to the laboratory in a cooled chest. Only analytical laboratories certified by the state in which the samples were collected will be used.

A chain-of-custody form will be used to record possession of samples from the time of collection to the time of arrival and login at the laboratory. The sample-control officer at the laboratory will verify sample integrity and confirm that they were collected in the proper containers, preserved correctly, and that there is an adequate volume for analysis. If these conditions are met, the samples will be assigned a unique log number for identification throughout analysis and reporting. The log number will be recorded on the chain-of-custody form and in the log book maintained at the analytical laboratory. The sample description, date received, client's name, and other relevant information will also be recorded.